

A false critique of “fiat money” invents its own kind of money on the internet and becomes an object of speculation

Bitcoin — “free money” for free citizens

The latest from the world of cryptographic ciphers

In the spring of 2021 the value of Bitcoin exceeds the “magic limit” of \$50,000 per coin. At the same time, a unique compilation of 5,000 third-rate digitized images (a so-called NFT, a ‘non-fungible token’) changes hands for the sensational sum of \$69,000,000. In both cases the experts are astounded at how much money can be had for the ownership of a mere pile of data. The fact that neither of the events fit neatly into their traditional categories causes them some difficulty in making sense of it all. What good is a currency “subject to such short-term and extreme fluctuations?” the economics expert at the *Süddeutsche Zeitung* (Munich) asks himself and his readers. His colleague from the arts section of the *Frankfurter Allgemeine Zeitung* ponders what has become of art when a so-called token, “nothing more than an encrypted dataset of cheap mass-produced items,” fetches a price customarily reserved for a genuine van Gogh. Unfortunately, neither of them goes on to consider *why* the markets for money and art present such enigmas. Instead, after finishing his brief polemic against the destruction Mammon has wrought upon the sublime, the Frankfurter friend of higher values cannot help but admit that even blockchain-encrypted kid stuff can enjoy the aura of uniqueness normally reserved for art. After all, the only reason people pay so much for this junk is because it is impossible to reproduce. The economist from Munich employs the same logic to make peace with a world he does not really understand. On the one hand, he says that given everything he knows about currencies, bitcoin cannot possibly be one. It is a “*speculative asset without utility*,” one that “shouldn’t really be worth anything.” And yet, on the other hand, he cannot deny that anything that can be used to speculate on the speculative interest of others is itself an asset, and suddenly he knows exactly why: “Bitcoin has value because millions, perhaps soon billions of people have

agreed on it.” How could so many people be wrong? Just moments before he considered bitcoin “*the mother of all fraud*,” and yet he in the end arrives at the certainty that “it is not wrong to invest a small portion of your savings in cryptocurrencies, starting with bitcoin. Just to have some.”

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Apparently you don’t have to understand much about the capitalist world or cryptocurrencies to find them both ultimately quite sensible. Courageous speculators show how easy it is to become fabulously rich, so why shouldn’t those who generally don’t worry about diversifying their portfolio (since they are normally too busy figuring out what they can do without) follow their lead? For the same reason, it makes perfect sense to congratulate a useless digital thing on its successful career as an object of speculation, even though its inventors sought to do anything but contribute to further speculation in the capitalist money system. But even this has a certain logic and necessity in this system.

1. The starting point: the institutionalized abuse of people’s trust in the financial system and how it can be remedied on the internet

The diagnosis

Shortly before the bankruptcy of Lehman Brothers kicks off the great financial crisis, a certain Satoshi Nakamoto releases Bitcoin, a new money on the Internet.^[1] His reason for doing so lies in his reservations about “*fiat money*”:^[2]

“The root problem with conventional currency is all the trust that’s required to make it work. The central bank must be trusted not to debase the currency, but the history of fiat currencies is full of breaches of that trust. Banks must be trusted to hold our money and transfer it electronically, but they lend it out in waves of credit bubbles with barely a fraction in reserve. We have to trust them with our privacy, trust them not to let identity thieves drain our accounts. Their massive overhead costs make micropayments impossible.”^[3]

Nakamoto clearly has a fundamental score to settle with state-issued money and the authorities traditionally in charge of monetary transactions. And yet he does not go to much theoretical effort for a critic who claims to have found a “root problem” in how money circulates. Instead he takes up the perspective of normal citizens who use money to buy things and whose main concern is how much they can get for the amount they have. This is the exceedingly narrow perspective from which Nakamoto views money’s elementary function as a generally binding measure of value and standard of prices, thus also the fact that money makes access to useful goods contingent on whether a person has the money to pay for them. He notes that this relation is variable, that the purchasing power of the individual units of conventional monies — which most people

don't have enough of anyway — regularly diminishes. And yet he does not aim to explain this loss of value, instead he merely laments the fact that money does not function as he thinks it should. Once he has found the culprits responsible for the malfunction, he is theoretically satisfied: the “*central bank*,” which regularly deprives citizens of their right to a currency they can count on in their everyday transactions. By relying on this right and making use of the official currency, citizens form the “*trust*” upon which, according to Nakamoto, the modern monetary system is based. The reason this trust represents a “*root problem*” is because it is continually betrayed — not only by the central bank responsible for the value of money, but also by private financial institutions through their lending practices. When it comes to the latter, the only thing Nakamoto has to teach us is that the banks essentially do the opposite of what they are supposed to do, handing out “*our money*” in speculative deals instead of keeping it safe and transferring it when instructed to do so. In short, everybody is forced to trust these public and private institutions because everybody depends upon them; and yet these institutions not only misuse the money entrusted to them in good faith, they also evade the supervision and control of those that depend on them. The functioning of money gets disrupted, in some cases money does not function at all, bank customers are deprived of the property they only want to transfer, etc. Banks, therefore, cannot be trusted at all.

The situation is no better when it comes to buying and selling on the internet:

“Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. While the system works well enough for most transactions, it still suffers from the inherent weaknesses of the trust based model. Completely non-reversible transactions are not really possible ... The cost of mediation increases transaction costs ... there is a broader cost in the loss of ability to make non-reversible payments for non-reversible services ... A certain percentage of fraud is accepted as unavoidable. These costs and payment uncertainties can be avoided in person by using physical currency, but no mechanism exists to make payments over a communications channel without a trusted party.”^[4]

For Citizen Nakamoto, unconditional fidelity to the contract and the smooth and inexpensive processing of payment transactions are crucial to the process of buying and selling. It must be ensured that the parties involved are paid for the goods and services they provide and that they get what they have paid for. Nakamoto sees himself — on behalf of all — cheated of his justified expectation that financial institutions will provide him with the services he requires. He sees humankind at the mercy of authorities that abuse their power over the system of payments to satisfy their own interests. Instead of fulfilling their fiduciary duties to their customers, they get rich off of them, interfere in the rights and duties of buyers and sellers in order to exploit them for their own advantage, thus abusing the trust that others are compelled to place in them.

The remedy

If the “root problem” of free-market monetary transactions is that they require “a trusted party” that has proven to be untrustworthy, then the remedy is obvious:

"Before strong encryption, users had to rely on password protection to secure their files, placing trust in the system administrator to keep their information private. ... Then strong encryption became available to the masses, and trust was no longer required... It's time we had the same thing for money. With e-currency based on cryptographic proof, without the need to trust a third party middleman, money can be secure and transactions effortless."[5]

"A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. ... What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party."[6]

Whenever Nakamoto points to the various deficits of “fiat money” in terms of facilitating “transactions” (devaluation, costs, uncertainties), he assumes an already existing means of payment: a monetary equivalent of the commodity or service involved in the transaction. And whenever he criticizes the central bank and private banks for distorting the flow of financial transactions and making them more expensive, he also assumes a certain sum of money that is supposed to change hands. After all, the fact that this money loses its value and its purchasing power over time is one of the major problems Nakamoto aims to solve. What is all the more curious is that the solution he proposes has absolutely nothing to do with the problem he purports to solve.

For although it is true that his proposed internet-based system of electronic payment does eliminate bothersome “third parties,” it also gets rid of the very money that citizens use to carry out transactions, and which Nakamoto himself assumes as the self-evident basis of their activities in the market economy. That is not an insignificant contradiction. His proposal for improving the functioning of the money economy reduces the very thing around which this economy revolves to an entirely dispensable triviality. And yet this contradiction does not bother him in the least. He simply sticks to the same functionalist thinking that underlies his criticism of “fiat money.” And if this criticism leads him to accuse this money of being a poor means of payment, then he takes it to be entirely self-evident that once he has designed a smoothly functioning system of transactions, a system he calls “cash,” then he will have also designed a better suited means of payment right along with it.

It is one thing to equate a system for transferring money electronically with money itself, to bring this mistake to life by inventing a new system of transactions and then to pretend that the only difference between this parallel internet universe, which does without real-life money, and the buying and selling that goes on in real life is that the parallel universe is better. Another thing entirely is the gigantic amount of wasted effort that goes into making this absurdity a reality.

2. Bitcoin, how to earn it and what it means to have it

“Coins”: A “medium of exchange” as the optimal means of its own exchange

Here is how an electronic substitute of money is supposed to work on the internet:

“We define an electronic coin as a chain of digital signatures. Each owner transfers the coin to the next by digitally signing a hash [i.e., a kind of mathematical fingerprint — author’s note] of the previous transaction and the public key of the next owner and adding these to the end of the coin. A payee can verify the signatures to verify the chain of ownership.”^[7]

Defining what counts as money and as coin is a tricky matter. The state’s decree that worthless scraps of paper are society’s means of payment is certainly an arbitrary act. Yet this decree only pertains to the form money takes, not to its political-economic *substance*, which consists in the private power of disposal over goods and services. This substance is based on private property, the exclusionary relation of private ownership over social means of existence. *That* is what money is a measure *of* when it functions as a measure of value; and that is what becomes a concrete means of acquiring material wealth and commanding labor once it takes on the form of money. Money is the epitome of wealth in a mode of production that is the work of a state power that declares its citizens to be owners of private property, free and equal legal persons, thereby imposing upon them the necessity to earn money. The same state power also provides them with the material that facilitates the relation of exclusion and quantitatively limited access defined by money. And when a state uses its power to decree worthless pieces of paper as representatives of this function, then this sovereign, arbitrary act has its material substance precisely in this relation of power, of exclusion and exclusive access.

The definition of money provided by the architects of bitcoin could not be more different. What gets “minted” in the digital world is a concatenation of data, the output of the minting process is a chain of data and is given the name “coin” so that everyone knows what the chain is supposed to be good for: a means of payment. Though the name given to this thing — coin, money — might suggest it is an analogy to the substance of real-life money, these digital coins embody nothing to which the words “coin” and “money” refer, since real-life money mediates access to commodities and commands labor for the reason that it represents the measure of their value. So here we have the odd phenomenon of a money that, on the one hand, is supposed to represent property that gets transferred in the material form of a coin; but, on the other hand, the property that is supposed to be electronically transferred is nowhere to be found. And the only thing that *could* be thereby transferred as property are “coins” that represent nothing but themselves. Satoshi Nakamoto has thus managed to invent a payment procedure that is undoubtedly at the autonomous control of its operators and can go without any

“trusted third parties,” yet it is self-referential in every respect. It can process “*transactions*” in which “*property*” gets transferred, but the property at hand consists of nothing but the medium of its own transfer. What the owner of a bitcoin owns is solely the means of transferring that ownership.

But there are still a few touches to be made to the masterpiece.

Instead of trusting in a “third party,” the ‘blockchain’ eliminates general distrust due to “multiple use” of digital money

The virtual coins are created by means of a freely usable computer program, which connects to other copies of itself via the internet, thus forming a so-called “peer-to-peer” network that generates a decentralized database, something like a virtual wallet of virtual coins. Every participant who joins in the game has the same database.^[8] The individual coins represent entries in this digital ledger, allowing their ownership and transfer to be documented in a manner that is completely anonymous and forgery-proof. “Third parties” are thereby made superfluous, the users in the network take care of everything themselves; they can retain full privacy while also watching out that no one cheats and spends their coins more than once. Otherwise, they just push clusters of data around among themselves, for this digital money consists of nothing but the minutely documented history of its own transfers, thus ensuring even without real money and real payments that there is no ambiguity when it comes to who owns which virtual property.

This legal formalism is all that remains of the real world of private property once it has been exported to S. Nakamoto’s world of data. It is ensured by a special procedure for encrypting all income and expenditures in a public ledger and ensuring that no entries can be altered after the fact. The individual coins are designed to be a kind of digital signature list, meaning that they do not consist in anything other than the history of their own use. The participants in this circus autonomously confirm the transactions that take place in their community by continuously updating the so-called “*blockchain*.” A single data block of recorded payments contains a cryptographic checksum of the last block added, which is then entered into the following block, thus cryptographically linking all blocks together in a single continuous chain, excluding the possibility of falsifying transactions, copying and duplicating digital money.

Nakamoto’s substitute for money, his “*means of exchange and method for enforcing contracts*,” is a capitalist Disneyland in cyberspace, a little amusement park where inveterate character masks of the market economy, free from any interference by third parties, can carry out the antagonisms of economic cooperation familiar to them from real life: buying, selling and such. As peers in an internal network, they maintain chains of digital signatures decentrally, signatures that *in form* act as a general embodiment of property, of wealth in the form of the exclusionary power of disposal *over* wealth, and gain access *to* it. *This* wealth, which *in substance* consists in their having disposal over the digital means of transporting this wealth, is something they can then send back and

forth via “*transactions*” in the network, very safely and quite cheaply. “A has received the present *payments* to him from B and C. He *combines* their amounts and pays 100 BTC of them to XY and receives the *remainder* of 50 BTC back. Signature: A”. Then and only then, provided this is what the blockchain states, can XY have 100 BTC and A have 50 BTC at their disposal, which, *ceteris paribus*, allows Mr. A as well as Ms. XY to continue the chain of similar transactions. But nothing else.

This, of course, is not what was promised. The promise was to make money — remember: “*our money*”! — “*secure*” from others and their misuse of it. And yet, the only thing that has been “*optimized*” and made “*secure*” is access to one’s own data. The gloriously proclaimed “*electronic payment system*” merely amounts to a mechanism for letting data wander back and forth, having it documented in a public ledger, and letting oneself be deluded into thinking that real money has been put in one’s wallet. Of course, if the spirit moves you, you can pretend that these data transfers represent “*online payments*” just like those made by citizens and banks, but that, too, is merely false labeling. By explicitly abstracting from the substance of money, Bitcoin robs the buyers, sellers and all other agents of the free market of the very thing around which their societal activities revolve. Recreating money by means of a digital central bank can thus only be a farcical imitation of real world transactions, in which money is a general equivalent of market-economic wealth. In order to take up Nakamoto’s offer for free self-realization and become a peer or user in his universe, one has to completely abstract from all the state-imposed economic constraints that turn people into agents of capitalist competition. And at the same time, one has to completely internalize all the customs and practices of this competition. Then they can transfer property having no monetary substance and incapable of being exchanged for anything, but which can be stored safely in a virtual wallet and transferred whenever and to whomever they want.

'Mining': replacing the state bank by a barter society that produces its own “medium of exchange” and nothing else

In order to convince peers to waste their processing capacity on this nonsense, the constant updating of the blockchain is organized as a competition for bitcoins:

“By convention, the first transaction in a block is a special transaction that starts a new coin owned by the creator of the block. ... The steady addition of a constant amount of new coins is analogous to gold miners expending resources to add gold to circulation. In our case, it is CPU time [computer processing time — author’s note] and electricity that is expended.”^[9]

The first to create a new block of payments and add it to the blockchain by solving a cryptographic math problem the fastest is awarded a sum of bitcoins created out of thin air. The substitute of money is thus earned by contributing to its circulation. We will spare our readers the details of the many mathematical operations involved in the process. For the most part they comprise the enormous effort put into precautions for the security of Bitcoin and for preventing any fraud. Nakamoto has thus also built in a

substitute for everything the state does with counterfeit-proof banknotes and the police to prevent its dear citizens from simply creating their own means of payment, and that is only logical. His followers, oddly enough, are not primarily interested in having a functioning system of trade for its own sake, rather they want to get access to the means that, even in their parallel universe, enables them to access the property of others. Clearly, the users of digital money are accustomed to the mores that govern the world of analog money. But, unfortunately, morality does not really pay off for the users of Bitcoin when it comes to the value of the money they use. Contrary to real miners who dig for gold because this special metal, by virtue of sovereign decree, embodies the private power of access to material wealth, the users of Bitcoin use real money to pay for computers and electricity in order to acquire a mere digital surrogate of money, which outside of their virtual world is not even suitable as play money. But even this is something they manage to cope with in their own way, as will be seen in the next chapter. What is also remarkable about the above quote is the interesting continuation of the mistake, mentioned in the first section of this chapter, of defining money as an optimal system of payment. Natural scientists had already found out by the 19th century that it is a serious mistake to believe that nature provides society with its means of payment.

"Gold and silver, in and of themselves, are not money. Nature does not produce money, any more than it produces a rate of exchange or a banker ... To be money is not a natural attribute of gold and silver, and is therefore quite unknown to the physicist, chemist etc. as such. But money is directly gold and silver." (Karl Marx, Grundrisse, Penguin edition, p. 239.)

Accordingly, in no way does the aforementioned gold miner want *"to add gold to circulation."* He wants the commodity gold because it circulates in society as money, or at the very least as a concrete representation of it. And neither is true because the creator of the means of circulation has buried it in mines.

Programmed scarcity instead of arbitrariness in creating money: Guaranteeing the stable value of a thing without value

As noted at the beginning, Nakamoto views the fact that the state's creation of money is unlimited in its arbitrariness as a major defect of money. And as easy as he makes it for himself when it comes to understanding the depreciation of money caused by inflation, just as easy is the remedy he comes up with. He sets an arbitrary limit on the creation of Bitcoin; this artificial *"scarcity"* is supposed to ensure its solidity and lasting utility as a means of exchange and payment. According to the ideology that the *"scarcity"* of a money commodity guarantees the stability of its value, Satoshi seizes on a conventional notion from bourgeois inflation theory, which counterposes a sum of money to an amount of goods to be circulated with it and endowed with prices, and assumes that an excess of the former over the latter is the reason for the depreciation of its value. However, bourgeois inflation theories assume that the same units of

measurement appear on both sides of the inequality, such that money functions as an unreliable, variable, but nevertheless valid standard of prices and as the quantified power to get access to goods whose value is measured in money. Although it is wrong to explain inflation as resulting from a disproportion between a pile of goods and a circulating quantity of money, that is not the point here.^[10] Nakamoto's theoretical errors go far beyond this. The scarcity that he regards as a guarantee for the stability of Bitcoin's value has no relation to the world of commodities at all; Bitcoin stands only in relation to itself, as a relation between an amount of data clusters, the time it takes to create them and a final limit for both. "Scarcity" in this instance merely means a quantity of "*coins*" that is not *unlimited*. Nakamoto thus spares himself the equally popular and false question germane to standard theories of inflation: why do the central banks responsible for money creation never manage to supply just the right amount required to circulate the price sum of the actual amount of goods in circulation? He has taken a decisive step beyond such questions: for Nakamoto, the value of his cryptocurrency coincides with the value-*stability* guaranteed by "scarcity." Nakamoto thus takes functionalism to its extreme. The manner in which he determines the monetary value of Bitcoin causes him to end up, quite logically, both theoretically and practically in a no-man's-land of complete indeterminacy.

As absurd as this construction is, it is quite easy to put it into practice. Nakamoto simply decrees that his money be scarce and builds it into the software that generates Bitcoin, limiting the speed and the absolute amount of cryptocurrencies that can be created. Approximately every four years, the amount of bitcoins that can be newly created is halved, allowing the amount of bitcoins to increase steadily, but at a decreasing rate. This ensures, first of all, a steady, moderate influx of fresh internet money, which is intended to accommodate the increasing demand. But once the limit of twenty-one million coins has been reached, that's it, because Satoshi N. has decided that it be so. That is certainly an innovative form of monetary policy, guaranteed to be stable and trustworthy, because it is exclusively intended to ensure the exclusive nature of the relationship between the peers involved, even in the long term. This is because the users themselves, as operators of the algorithm that restricts the supply of their means of payment, guarantee the stability of this means' value.

This program also constantly adjusts the processing power required to "create" a new portion of bitcoins depending on the amount of processing power users employ to satisfy their private avarice, which once again reveals the same ideal, mentioned above, that underlies Nakamoto's criticism of official fiat money and his very special understanding of what makes money useful. He pushes the ideology that money is merely whatever functions as money so far as to implant a kind of automatic state of market equilibrium in the Bitcoin system. If bitcoins are generated faster than the rate of one every ten minutes, the mathematical problem to be solved is made more difficult; conversely, if new blocks are calculated at a rate less than one than every ten minutes, it is made easier. He thus follows up on his conviction that the arbitrariness of the money

creation carried out by the state and private banks is the fundamental evil of current money systems, making sure that when it comes to the “*free money*” he offers to free citizens for their free use, the money supply will be automatically limited, thus eliminating any possibility of arbitrariness. Once the upper limit is reached, no more bitcoins can be created, thus acting as a guarantee for the stability of Bitcoin’s value. That may be absurd given the nature of the ‘money’ his cryptographic algorithms create for use by the internet-savvy, but in Nakamoto’s circular logic, the imagined loss of value of a thing that doesn’t have any value to lose makes perfect sense. If uncontrolled money creation is responsible for the ‘devaluation’ of money, then the *self-organized restriction* of money creation, conversely, will guarantee that the value of their creation remain stable. And because until the year 2130 or so more and more bitcoins will be created, though less and less more the more bitcoins there are, users can rely on the fact that the money they send through the internet will always and forever be received as the same money they sent.

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Let us summarize Nakamoto's magnum opus thus far: it originates in a radical abstraction from what existing money is. Compared to what the freedom of competition costs the vast majority, the originators of Bitcoin criticize a rather subordinate item on the balance sheet. They complain about the costs of inflation, bank fees, and other, more microscopic hardships, and they draw an absurdly disproportionate conclusion: they must have their own money! They do not want to know what it is that functions as money, why it works, *for what* purpose, and what the causes for such disturbing effects and side effects of the monetary system are. Instead they have their own ideas on how money could *function* better for them. They do not deny that money already functions in the established money economy, and why should they, since *their* way of perfecting its functioning has nothing to do with the real world anyway. It derives solely from their own imaginations. There, property-owners finally have the power to have exclusive disposal over their property, because now they use and trade a money-object at their exclusive control. And because they alone control *this* medium in their virtual transactions, they are certain that what they control *is* money.

Satoshi and his followers invest their intellectual assets in the *construction* of a ‘payment system,’ in the invention of something that functions in a way they consider useful. They do not think of themselves as crackpot dreamers, since there really is a world in which their dream becomes reality: the virtual world of the internet. Provided that more and more players are keen on earning money on a cyberspace playground by competing over whose computers can solve absolutely meaningless mathematical problems the fastest, the fiction of a truly autonomous money, completely at the disposal of the users, virtually becomes reality.

This is what happens when self-assured citizens view themselves as the authors of the rules they must obey in real life as mere extras in the capitalist money economy, and when modern technology allows them to act as if owners of property are also the

masters of reality, as if *they* were the ones who set the norms, instead of being mere character masks following the norms that a state imposes when it defines them as owners of property. Technically, at least, this is possible. Bitcoin really does give reality to the notion of exclusive disposal over the transfer of ‘property,’ buying, selling, and the rest of their contractual dealings. And their peers do in fact confirm that their fiction also works *in practice*. It is impressive just how much they have internalized all the insane, yet truly existing laws of the money economy and take them for granted as premises of the freedom to compete against each other. They actually celebrate their self-made “free money” (S. Nakamoto) as the ultimate form of *privacy*. And when in their little capitalist parallel universe they follow the norms of real competition, independent of any interference or tutelage on the part of the state and the banks, they truly see that as emancipation from such higher powers. To be able finally to transfer money without bank fees — these consummate capitalist competitors can imagine no greater freedom. Freedom for them is the ability to be masters of their own money while navigating the conditions a state power imposes on the life of its free citizens:

“We cannot expect governments, corporations, or other large, faceless organizations to grant us privacy out of their beneficence. ... We must defend our own privacy if we expect to have any. We must come together and create systems which allow anonymous transactions to take place ... We are defending our privacy with cryptography, with anonymous mail forwarding systems, with digital signatures, and with electronic money.”^[11]

The fact that such ideas take on life and bounce around within Nakamoto’s communications channels is worrying enough, but that is harmless in comparison to the madness that sets in once the actually existing capitalist money economy comes into contact with its virtual money clone. Of course, the owners of Satoshi’s money are the ones who make first contact by asking what it is they actually possess when they possess Bitcoin, what the substance of the property is that they cheerfully transfer when they carry out such “transactions.”

3. Intermezzo: What — if anything — is a bitcoin actually worth and why and when exactly is it worth something?

What bitcoins are not is a question answered by the very peers who have created them. Fairly early on, they raise the question of how their “*free money*” becomes *real money*, and how a vehicle for the “*transfer of property*” in Bitcoin becomes a *real* medium of exchange that provides access to real wealth.^[12] One peer, who is clearly up on the latest scholarship, quotes a famous ‘paradox’: “How does money have value as a medium of exchange if it is valued because it serves as a medium of exchange?” The functionalism at the heart of Nakamoto’s entire critique of state money, i.e., the fallacy of identifying money with its useful function for exchange, raises a suspenseful question:

does money have value because of its useful function or does it only function so usefully because of the value it already has? By following through on the fallacy of deriving the exchange value of money from its usefulness in exchange, these scholars at least manage to inquire into the starting point of this circle. And they resolve this problem by employing the common instrumentalism of bourgeois science. Just as these scholars only view the properties of money as a means of exchange in terms of how they enable access to the world of commodities, so too do they find the answer to their false questions in how money is used *in practice*. The educated peer cited above thus also finds the appropriate quotation to settle the ‘paradox’: “*Money is demanded and considered useful because of its already existing money prices.*”^[13] The peer thus manages to circumnavigate any questions that might bring us closer to any clarification — such as why money functions as a medium of exchange and which functions money has, or what the prices attached to goods and ‘expressed’ in money consist of in the first place. But the participants in this search for scholarly explanations of money can live without answering these questions in light of the pearls of wisdom on the only question that is of interest to *them*: how does bitcoin become a medium of exchange like existing money? Their answer, once again, consists in the usefulness of money for gaining access to commodities, which conveniently show how much money needs to be forked over to acquire them. The solution to the puzzle of how bitcoin could become such a means of access is, therefore, not so difficult:

"In order for Bitcoins to serve as a medium of exchange ... there must be a translated knowledge of money prices. ... The essential point is that once exchange can occur between a money (USD) and Bitcoins, providers of goods have a means by which to value Bitcoins as a potential medium of exchange."

Bitcoin therefore has no value and does not function as a medium of exchange; therefore, it is not money, because it has no relation to the commodities and the values expressed in their prices. The Bitcoin community admits to all of this in practice, but it does not matter to them in the least. As long as *some* relation between Bitcoin and real money is established, then Bitcoin has a price that gets ‘expressed’ in real money — and this can be interpreted as a result of the value placed in the properties that make Bitcoin a perfect medium of exchange, and be it merely in the virtual world. And given the fact that people are willing to fork over real money in exchange for Bitcoin, the latter obviously has value in the real world as well — they are ‘worth’ the US dollars paid for Bitcoin. If *some* relation can be established between BTC and the US dollar, then all prices ‘expressed’ in dollars can be converted into BTC prices, and the peers take that as the initial spark for a “bitcoin economy.” They simply take for granted that the fantastic possibilities they see in bitcoin^[14] are what is expressed in the official valuation of Bitcoin in the form of a dollar price, and that sooner or later commodity producers will come to share their conviction. This optimism makes so much sense to the originator of BTC that he briefly emerges from anonymity and gets right to the heart of their crooked thinking with the following “*thought experiment*”:

“As a thought experiment, imagine there was a base metal as scarce as gold but with the following properties: • boring grey in colour, • not a good conductor of electricity, • not particularly strong, but not ductile or easily malleable either, • not useful for any practical or ornamental purpose, and one special, magical property: • can be transported over a communications channel.

“If it somehow acquired any value at all for whatever reason, then anyone wanting to transfer wealth over a long distance could buy some, transmit it, and have the recipient sell it. Maybe it could get an initial value circularly as you’ve suggested, by people foreseeing its potential usefulness for exchange. (I would definitely want some.) Maybe collectors, any random reason could spark it. I think the traditional qualifications for money were written with the assumption that there are so many competing objects in the world that are scarce, an object with the automatic bootstrap of intrinsic value will surely win out over those without intrinsic value. But if there were nothing in the world with intrinsic value that could be used as money, only scarce but no intrinsic value, I think people would still take up something [as money].”^[15]

Nakamoto affirms the completely abstract nature of his construction and explicitly defines money as a medium of exchange in the above-mentioned ridiculous sense: he claims that money mediates the exchange of commodities not because it expresses *their* value in an independent form, but because it functions as a vehicle for transferring value. The material basis of “wealth” that Nakamoto wants to transfer “over a long distance” avowedly consists in a thing without value or use-value, weaving its way through the internet. And the “*property*” that gets transferred there fittingly consists in the right of exclusive disposal over this thing. The only relation of this certain something to the real world of wealth and property consists in the *price* that someone is willing to pay in real money for the exclusive right of disposal over it — for the purpose of sending it to a recipient, who in turn sells it again and thus transforms it back into real money. That is what, in Nakamoto’s ‘thought experiment,’ functions de facto as a ‘medium of exchange’ and provides the worthless thing with its ‘value’. It begins with the purchase of an exclusive right of disposal over an electronic vehicle for transporting a data chain and reappears at the end with its sale and reconversion into money, and the only substance of the ‘*property*’ transferred in this way consists in the *sum of money* used to purchase it, earned by the sale of it, or possessed by virtue of owning it.

As Nakamoto’s quote reveals, this sum of money, and thus the “*value*” of Bitcoin, is a peculiar thing indeed: an expression — for whatever reason — of the subjective assessment of its utility, of the fact that it guarantees the exclusivity of its own transfer. Bitcoin’s “potential *usefulness* for exchange” consists solely in this guarantee, the usefulness of which exchangers get to discover. It derives its “*value*” from the private interest in a vehicle for transporting electronic data, worthless in itself, between sender and recipient. Its “*value*” therefore consists merely in an act of arbitrariness by which one peer pays another peer whatever price an exclusive exchange is worth to him.

The visionary Nakamoto thus affirms how right the community of users are in all their reflections on how bitcoin could become a real medium of exchange: they are (says he) quite right to identify the value of money with the valuation of its usefulness as a means of exchange, so they are not at all wrong to assume that by generalizing their valuation of bitcoin, the latter will automatically accrue the value that real money already has. The quintessence of the conclusion arrived at by the peers — “The value of currency or money is discovered by the market, just as it is discovered for any other good. It happens whenever something new is invented or discovered.”^[16] — is just as absurd as their search for the value of their medium of exchange and their way of determining it in practice.

4. The crown of creation on the internet: The value of fictional money in the world of real money

It did not take long for the members of the Bitcoin community to try shopping with fictional money in a world in which all goods and services have a price because everything in this world revolves around earning and increasing real money. That, obviously, is not an easy task, but first signs of hope appeared once a 10,000 bitcoin transfer was offered to whomever would have two pizzas delivered to a certain address. For this friendly donation, 41 real US dollars were to be paid to the pizzeria, and the donor would receive electronic coins. With enough good will, this ‘transaction’ could be interpreted as something like a procedure for determining the *price* of Bitcoin. Moreover, by establishing such a price, i.e., *some* relation between real money and its virtual substitute, the users could see themselves as having taken the first step towards establishing an artificial money as a medium of exchange, one that would be functionally equivalent to and exist right alongside real money. Though bitcoins only have a price in this one case, the procedure for determining that price — a private agreement between private individuals — can of course be reproduced at will. And so attempts to turn bitcoins into money began to multiply on trading platforms across the internet. Some sought to sell them for as high a price as possible, others sought to buy them for as low a price as possible; the price agreed upon thus became the price they had — though only for each individual transaction. As long as this random procedure produced a somewhat ‘stable’ exchange relation, internet-savvy hairdressers, fast-food chains selling coffee or chicken legs, and even a large producer of computer hardware began to accept bitcoins as payment — but only as long as this stable relation existed, necessarily a very short duration. After all, this kind of ‘value creation’ among private individuals only comes about by way of arbitrary valuation. Prices in this case are determined solely by supply and demand, which means that the actors involved only reproduce the arbitrary relation between Bitcoin and the world of commodities. When someone lays down a certain amount of US dollars for a certain amount of BTC, this no

more expresses a ‘currency relation’ than the relation between an oil painting and the amount of dollars that gets paid for it.

But so what. Even without Mr. Nakamoto’s special zeal, the capitalist mode of production has managed to bring about promises to pay that function as very real means of enrichment in the superstructure of finance capital. And so it is inevitable that even the world outside of the Bitcoin community would eventually stand up and take notice once arms merchants and drug dealers, pederasts and money launderers began to see the advantage of hiding their identities behind unbreakable keys; when WikiLeaks sympathizers began to make their donations in BTC, bypassing the US embargo, and the practice of subjective value creation on interactive websites proudly calling themselves “bitcoin exchanges” continued to grow. Of all people, the pros at accumulating real, ‘fiat’ money — the very ones whom Nakamoto blames for the problems that beset conventional currencies — were the ones to realize Nakamoto’s dream of an “initial value” that “somehow” comes about. They did so simply by treating it as yet another article they can use for their own standard business practices.

Similar to how a ‘definition’ represented the birth of Bitcoin, a decision also marked the prelude to the final stage of the electronic coin’s career. Finance capitalists interpreted Bitcoin as an object of value similar to a promise to pay. The particular advantage of this object is the total indeterminacy of its value, the fact that the latter is completely dependent on the relation between supply and demand; it is not even affected by the prevailing taste in art — to take up the analogy of NFTs mentioned at the beginning. Finance capitalists treated Bitcoin just as they treat all other kinds of promises to pay, however dubious they may be. On real stock exchanges, the main venues of finance capital, bitcoin is listed as an article of trade, thus turning, for the first time, virtual money into material for speculative investments. A heap of data thus came to be treated as a kind of digital security and given a price in real money. Once this occurs, speculation immediately and permanently replaces the activities of freelance bookmakers and determines the value of BTC. Its value is measured in terms of the speculative interest in ‘going’ into bitcoins — which in turn depends upon expectations of further price increases and fears of a price decline. In the former case it is important to get in as early as possible, in the latter case it is also best to get in as early as possible and, ideally, be the first to get out again. After all, in the world of finance, money gets made by successfully anticipating the speculative calculations of all the other vultures, and this obviously goes for BTC, too. “Erratic” price movements are the necessary consequence for a good whose value is determined by speculation; of course, in these circles, that in no way makes these price movements absurd. On the contrary, for avaricious and risk-hungry investors, such volatility is a solid foundation for getting rich off of them, and the more speculators go in for BTC, the more others will find it impossible to miss such a great opportunity for buying and selling limited copies of piles of data. That is how a Bitcoin ‘boom’ comes about, lending virtual money a genuine existence as a piece of finance capital: as has long been customary in the case of pork

bellies, barrels of oil, wheat, etc., Bitcoin *futures* are now also listed, tradable commodities, financial bets on the price trend of the BTC commodity without anyone ever intending to acquire it.

This speculative manner of giving Bitcoin value has an effect on the ingenious methods for generating it, and brings the same insanity to bear here as well. If, thanks to the bustling nature of the finance-capitalist superstructure, Bitcoin is in fact as good as real money, then “*mining*” it is also as good as really creating value. It only needs to pass the crucial test in capitalism: it has to pay off, and as always, this is decided by means of a comparison between the costs expended to create it and the proceeds to be derived from selling it. And Bitcoin currently fetches impressive prices on the market, attractive for a speculation that hews to the speculation of finance capital. The more the price of Bitcoin rises, the more revenue beckons to the producer, and this in turn modifies the calculation of the effort to produce it. If the commodity brings in a lot of money, then it’s worth a lot of effort to produce it — the main thing is that the comparison between both sums of money ultimately yields a positive balance. Bitcoin thus not only becomes a security, but the concatenation of data also becomes the basis for a veritable capitalist value chain. Because “*mining*” promises a profit, daring entrepreneurs find out that what was once the pastime of amateur computer freaks can in fact be a business model suited perfectly to their own. They thus set out to increase their wealth by producing a valueless commodity that now has a price, and it goes without saying that this is perfectly reasonable under capitalism. Since production of any kind only occurs on the condition that the producer makes a profit, everything that promises a profit gets produced. Entrepreneurs thus undertake massive expenditures for server farms, the energy to operate and cool them, and for the ongoing technological optimization of software and hardware. The purpose of the investment is to be the first to create a valid block and pocket the bitcoins offered for it. Selling the bitcoins is supposed to make the whole effort profitable, which it only does, of course, if the assumed Bitcoin price remains more or less ‘stable,’ or at least does not ‘sink,’ and certainly not to an extent that dashes any hopes of making a profit. Regardless of whether the miners end up satisfying their greed or not, there is no doubt that Nakamoto’s brainchild not only succeeds in the world of fictitious capital, but also leaves its metastases in the world of ‘real’ moneymaking. Veritable server farms with an energy demand comparable to Denmark, Italy, or Argentina compete against each other, entire industrial installations are scattered around the globe for no other purpose than to allow 30 trillion unsuccessful computing operations to be performed every 10 minutes. The entire purpose of these server farms consists in giving a defined probability to that one successful computational attempt for which Mr. Nakamoto’s software spits out a defined amount of bitcoins *before* any of the others do. It goes without saying that investors don’t shy away from this even when the same software, thanks to the effort they put in, continually increases the effort required to generate the new bitcoins they want to

snatch up. They respond by mobilizing even more computing capacity, so that their investment is guaranteed to pay off...

5. Conclusion

At the end of the glorious undertaking to construct a digital money as a means of ensuring that the capitalist money economy functions better for those who use money to exchange, a rather devastating result emerges: the existing money economy with its own crazy logic functions so perfectly that it is even able to absorb fictitious money without any hiccups. The real function of this digital money is not as a useful medium of exchange, but as mediator of a mode of production whose purpose it is to turn money into more money. The value that finance capitalists attribute to Nakamoto's artifact, and the value that it therefore has, is based on the fact when it comes to the process of turning money into more money, the experts of doing so in real money can use anything at all — “boring grey ... not useful for any[thing] practical” — as its vehicle. In the real world, the biggest load of crap has value if it can be subject to the exclusive disposal of a private owner for whom it is suitable as a vehicle for the increase of value and gets appreciated *as such*.

Nakamoto's fictional money ultimately does function in reality, namely capitalistically. It is an appendage to the speculative superstructure that could not be more detached from its basis, i.e., from the mode of production that serves the purpose of real money, which is to increase. And this basis has long since disappeared from the view of a bourgeois mind to whom an unalterable data entry is enough to count as property, because he can use it to celebrate the freedom and privacy he has managed to wring from the state and the banks.

Notes

[1] “Satoshi Nakamoto” is the pseudonym of an individual or group who published the technical concept of Bitcoin (“A purely peer-to-peer version of electronic cash”) and the bitcoins themselves, as well as the software that generates and manages them. (Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System,” Aug. 1, 2008) [<https://bitcoin.org/bitcoin.pdf>]

[2] “Fiat money from the Latin word fiat (‘let it be done’) is an economic object with no intrinsic value that serves as a medium of exchange ... The usage of money depends on its usefulness. Usefulness consists in the fulfillment of the three money functions of medium of exchange, means of savings, and measure of value or unit of account.” (German Wikipedia, “Fiatgeld”) [<https://de.wikipedia.org/wiki/Fiatgeld>]

[3] Satoshi Nakamoto, “Bitcoin open source implementation of P2P currency,” P2P Foundation, February 11, 2009 [<http://p2pfoundation.ning.com/forum/topics/bitcoin-open-source>]

[4] Satoshi Nakamoto, “Bitcoin,” op. cit., p. 1

[5] Satoshi Nakamoto, “P2P currency,” op. cit.

[6] Satoshi Nakamoto, “Bitcoin,” op. cit. p. 1

[7] Satoshi Nakamoto, “Bitcoin,” op. cit., p. 2

[8] We refrain as much as possible from presenting technical details and only mention what we think necessary to understand the absurdity of the construction. Those interested in more details can find all they need on Wikipedia or in the relevant literature. Here you can also read about how Bitcoin was created out of nothing, how the first electronic particles found their way into the world of the internet: Satoshi transfers a sum of bitcoins to himself (a first ‘signature’), then transfers it to his first ‘peer,’ who adds his ‘signature’ to it — and receives 50 bitcoins as a reward. More on this in the next subsection under the heading ‘Mining.’

[9] Satoshi Nakamoto, “Bitcoin,” op. cit., p. 8

[10] See *Finance Capital (2nd revised edition)*, **chapter III**, section 2 c, “Productive force and unproductive government debt,” Gegenstandpunkt Verlag, 2021.

[11] “A Cypherpunk's Manifesto,” Eric Hughes, March 9, 1993
[<https://nakamotoinstitute.org/cypherpunk-manifesto/>]

[12] In what follows, we quote in detail without further citation from a mid-2010 discussion reproduced in “Bitcoin Forum > Economy > Economics > Bitcoin does NOT violate Mises' Regression Theorem,” which can be found and read in full at <https://bitcointalk.org/index.php?topic=583.0>

[13] The detailed critique of the bourgeois theories of money can be found in: W. Möhl, T. Wentzke: *Das Geld. Von den vielgepriesenen Leistungen des schnöden Mammons*, Munich 2007, p. 17 ff. [untranslated]

[14] Anonymity, decentralization, cryptographic trust substitute, built-in deflation, etc. — or in short, as one of the participants in the discussion sums up, “*Bitcoins have value because they offer some qualities, and some people value them. Also, I would add ideological value.*”

[15] Satoshi Nakamoto, “Bitcoin Forum,” op. cit.

[16] “Bitcoin Forum,” op. cit.

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